

# SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN (Autonomous)

Department of Electronics & Communication Engineering  
Vishnupur, Bhimavaram - 534202

## MICROWAVE & OPTICAL COMMUNICATIONS LAB

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**Laboratory-technician** : Mr. P. Chiranjeevi Varma

### OBJECTIVE:

The objective of this lab is to familiarize the students with microwave and optical communication techniques/technologies in microwave communication. The students study the operation and characteristics of microwave sources such as klystron and Gunn diodes, load impedance and standing wave measurements, antenna gain and radiation pattern measurements.

Optical communication deals with the study of the characteristics of the optical fiber and also analog and digital fiber links using LED and LASER sources.



**List of Equipment:**

S.No.	Item Description	Qty
1	Microwave Bench using Klystron power supply	6
2	Microwave Bench using Gunn Power supply	2
3	Klystron Tubes (2K25)	3
4	Tunable Probes	7
5	Multi Hole Directional coupler (3dB, 6dB, 20dB)	9
6	Fixed attenuators (3dB, 6dB, 20dB)	9
7	Circulators (T & Y)	6
8	TEE Junctions (E - Plane, H - Plane & Magic TEE)	9
9	Wave Guide Stands	29
10	X- Band Microwave Antennas : (Pyramidal Horn Antenna, E-Sectional Horn Antenna, H-Sectional Horn Antenna, Pick Up Horn Antenna, Parabolic Antenna With Feed 8" Dia, Slotted Antenna (Narrow Wall & Broad Wall), Dielectric Antenna)	9
11	Accessories (for Microwave Benches): (Gunn Oscillator With M-Type, Isolator, Frequency Meters, Variable Attenuators, Detector Mounts, Matched Terminations, Movable shorts, SS tuners, phase shifters, sliding termination, Digital Multimeters, Cooling fan with stand, Shorting Plates)	26
12	Fiber Optic Digital Link Trainer Kit (Tx + Rx)	2
13	Laser Diode Trainer Kit -LINK-E	2
14	LED Fiber Optic Comm. Kit-LINK-A	2
15	Oscilloscope (30 MHz)	4
16	Function Generator (1-10 MHz)	2
17	Antenna Trainer(50 - 850 MHz) S-54V (Transmitter Generator (50-860 MHz)),	1
18	S-54P Positioned Stepper, S-54R Receiver Synthesized	1
19	S-9811 Micro Strip Antenna Trainer (850 MHz To 1300 MHz)	1
20	Micro Strip Antenna Elements Spares: (A1 - Dipole L/2),(A2 - Dipole L), (A3 - Dipole 2/3l), (A4 - Fold Dipole L/2), (A5 - Yagi 3 Element), (A6 - Yagi-(5 Element)), (A7 - Yagi 7 Element),(A8 - Yagi 3 E Fold),(A9 - Log-Periodic),(A10-Loop L/4),(A11-Quad L/4),(A12-Vertical L/4),(A13-Discone),(A14-Endfire L/2),(A15-Broadside L/2),(A16-Helical),(A17-Slot L/2), (A18-Slot Cyl L/2), (A19-Telescopic), (A20-Shielded Loop)	1